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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,169	01/12/2001	Ursula Murschall	00/002 MFE	2792

7590
ProPat, L.L.C.
2912 Crosby Road
Charlotte, NC 28211

04/10/2003

EXAMINER

UHLIR, NIKOLAS J

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A 314

Office Action Summary

Application No.

09/760,169

Applicant(s)

MURSCHALL ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) 13-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) none is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Withdrawal of Finality

1. The finality of the office action mailed 10/30/02 is hereby withdrawn. The examiner sincerely apologizes for any inconvenience caused to the applicant as a result of the extended examination of this case. A new office action on the merits follows.

Examiners Note

2. This office action is in response to the after final amendment dated 9/16/02. This amendment does not introduce new considerations for the examiner and is therefore entered. The examiner has further considered the applicant's arguments relating to the optical properties as stated in paper number 10, particularly those related to the haze of the film. After reconsideration, the examiner finds these arguments to be persuasive. Thus, the prior rejections of claims 1-12 are hereby withdrawn. In light of new art that is being applied by the examiner, the amendment does not place the case in condition for allowance.

Claim Objections

3. Claim 1 is objected to because of the following informalities: "at least on" in line 4 of the claim should be "at least one." Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention. In the instant case, the applicant in claim 1 recites "where at least the flame retardant is provided as a compounded first masterbatch, and preferably also the UV stabilizer." It is unclear to the examiner what exactly is required by "preferably also the UV stabilizer," as the applicant indicates how the UV stabilizer is added to the composition later in the claim. Clarification is required.

6. Claim 11 is rejected under 35 U.S.C 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 recites that the amount of UV stabilizer added is a weight % based on the total weight of crystallizable polyethylene terephthalate. There is no antecedent basis for the requirement that the film material must be crystallizable polyethylene terephthalate, as claim 11 is dependent on claim 9, which is dependent on claim 1 or 7. Aside from claim 2, none of the claims require that the crystallizable thermoplastic of claim 1 be PET. Correction is required.

Claim Rejections - 35 USC § 103

7. Claims 1-2, 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murschall et al. (DE19630599) in view of Oishi et al. (US5936048).

8. For the purpose of this examination, the examiner has relied upon an oral translation of the Murschall et al. reference to provide basis for this rejection. A complete translation of the reference has been requested and will be provided to the applicant when it is obtained.

9. Regarding the limitations of claim 1, wherein the applicant requires a transparent, low flammability, UV-resistant, oriented film made from a film forming thermoplastic and

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having a thickness of from 5-300 μ m, wherein the film comprises at least one crystallizable thermoplastic; at least one UV stabilizer; at least one flame retardant; where at least the flame retardant is provided as a compounded first masterbatch, and preferably also the UV stabilizer, where the UV stabilizer is thermally stable at temperatures exceeding 240⁰ C, is provided in the first masterbatch or as a compounded second masterbatch during the production of the film, where said oriented film has a luminous transmittance of >80%, a surface gloss of >100, a haze of 20%, and a yellowness index of 10.

10. The limitations "where said at least one flame retardant, as dispersed component of a masterbatch" and "wherein the UV stabilizer.... is provided in the first masterbatch or as a compounded second masterbatch" in claim 1, are product-by-process limitations that do not appear to be further limiting in so far as the structure of the product is concerned. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP § 2113.

11. With respect to the limitations of claim 1, Murschall et al. (hereafter Murschall) teaches an oriented transparent polyethylene terephthalate (a known crystallizable material) film that contains a UV stabilizer and one or more antioxidants. In specific embodiments, this PET film is formed to a thickness of 250 μ m (examples 1-6), thus the

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thickness limitation is met. Murschall teaches that suitable UV stabilizers include 2-hydroxybenzophenone, 2-hydroxybenzotriazole, resorcinol monobenzoate, oxanilides, hydroxybenzoic esters, sterically hindered amines and triazines, salicylic esters, cinnamic ester derivatives, and organo-nickel compounds. Typically 1-5% by weight of the UV stabilizer is added based on the weight of the PET (page 3, lines 5-55). It is the examiners position that the thermal stability of a UV stabilizer is a material property. Thus, as the list of UV stabilizer utilized by Murschall identically matches the list of UV stabilizer claimed by the applicant in claim 6, the examiner take the position that the thermal stability requirement is met. It is further noted that example 2 of Murschall recites a PET film that exhibits a surface gloss of 154, light transmission (equivalent to luminous transmission) of 91.2%, a mist value (equivalent to applicants haze value) of 2.8, and a yellowness of 4 (page 8 example 2).

12. However, Murschall does not teach the use of a flame retardant in the composition, and does not teach a film having a haze value of 20% and a yellowness index of 10.

13. Regarding the flame retardant, Oishi et al. teaches a method for preparing a modified polymer resin (title). These polymer resins include polyester such as polyethylene terephthalate (Column 17, lines 43-45). Oishi also teaches that in addition to a modified resin additive, an additive such as dimethyl methylphosphonate (DMMP) may be added to a resin to provide that resin with flame retardant properties (column 21 lines 4-11). Typically this flame retardant is added in an amount of 5-40% by weight (Column 23 lines 47-48).

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14. Therefore it would have been obvious to one with ordinary skill in the art to add a 5-40% of a flame retardant such as DMMP as taught by Oishi et al. to the polyethylene terephthalate film taught by Murschall et al.

15. One would have been motivated to make this modification due to the increased flame resistance of the PET film one would expect to gain as a result.

16. It should be noted that DMMP is listed by the applicant in the instant specification as a suitable flame retardant that is soluble in polyesters. Thus, the examiner takes the position that the limitations regarding the flame retardant in claim 1 (i.e. solubility in polyester) are met when DMMP is added to the PET film of Murschall et al.

17. Regarding the applicants requirement that the film exhibit a haze of 20% and a yellowness index of 10. The examiner acknowledges that neither Murschall nor Oishi teach these particular values. However, the applicant has not established the criticality of these particular values to the invention, and the properties disclosed by the film of Murschall meet the applicants preferred ranges for suitable haze ($\leq 20\%$ and yellowness ≤ 10) as recited on page 4 of the instant specification. Further, it is known in the art to tailor the optical properties of a film to suit a particular application. Thus, the examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to tailor the haze and yellowness properties of the film of Murschall as modified by Oishi to meet the optical requirements of a particular application.

18. Regarding the limitations of claim 2, wherein the applicant requires the crystallizable film to be polyethylene terephthalate, polybutylene terephthalate, or

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polyethylene naphthalate, preferably polyethylene terephthalate. This limitation is met as set forth above for claim 1.

19. Regarding claim 4, wherein the applicant requires the amount of flame retardant present to be in the range of 0.5-30% by weight. This limitation is met as set forth above for claim 1, as Oishi states that 5-40% by weight of a flame retardant is suitably added to PET. As 5% is completely encompassed in the applicants range, this limitation is met.

20. Regarding claim 5, wherein the applicant requires the amount of UV stabilizer to be 0.1-5% by weight based on the weight of the crystallizable thermoplastic. This limitation is met as set forth above for claim 1.

21. Regarding claim 6, wherein the applicant requires the UV stabilizer to be selected from the particular group recited. As stated above for claim 1, Murschall teaches an identical list of suitable UV stabilizers. Thus, this limitation is met.

22. Regarding claim 7-8, wherein the applicant requires the flame retardant to comprise an organic phosphorous compounds, specifically dimethyl methylphosphonate. This limitation is met as stated above for claim 1.

23. Regarding claim 9, wherein the applicant requires 0.1-1.0% by weight of a hydrolysis stabilizer selected from alkali metal stearates, alkaline earth metal stearates, alkali metal carbonates, and alkaline earth metal carbonates, or from 0.5-0.6% by weight of a phenolic stabilizer having a molar mass >500g/mol to be additionally present in the film.

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24. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murschall modified by Oishi as applied to claim 1 above, and further in view of Rakos et al. (US6251505).

25. Murschall as modified by Oishi does not teach coating the PET film with copolyesters or adhesion promoters, as required by claim 3.

26. However, Rakos et al. (hereafter Rakos) teaches an oriented polyethylene terephthalate film. Further Rakos teaches applying an adhesion promoting coating to either side of the PET film to improve the adhesion of the film to a substrate (Column 6, lines 61⁺).

27. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the PET film disclosed by Murschall as modified by Oishi with an adhesion promoting coating, as taught by Rakos.

28. One would have been motivated to make this modification due to the increased adhesion of the film to a substrate that one would expect to gain as a result.

29. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murschall as modified by Oishi as applied to claim 1 above, and further in view of Schreck et al. (US5866246) and Kishida et al. (US5008313).

30. While Murschall as modified by Oishi does teach the use of a hydrolysis stabilizer in the PET film, Murschall as modified by Oishi does not teach utilizing a hydrolysis stabilizer comprising .1-1% by weight of an alkali metal stearate/carbonate or alkali earth-metal stearate/carbonate. In addition, these references do not teach the use of .05-.6% by weight of a phenolic stabilizer which has a molar mass greater than 500g,

specifically a phenolic stabilizer such as 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene or pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate.

31. However, Schreck teaches that to improve the properties of thermoplastic polymers such as polyester, 0.5-2% by weight of stabilizers such as alkali metal stearates/carbonates, and phenolic stabilizers such as 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene or pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate can be added to the polymer composition (column 11, lines 15-20 and column 12, lines 8-21). Further, Kishida et al. teaches phenolic stabilizers such as pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate are heat stabilizers that are added to thermoplastic resins in order to control discoloration and heat deterioration under high temperature conditions, (Kishida column 3, line 63-column 4, line 28).

32. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate .05-2% of a metal stearate/carbonate, alkali earth-metal stearate/carbonate, or a phenolic stabilizer as described by Schreck et al. to the multilayer film described by Murschall as modified by Oishi et al.

33. One would have been motivated to make this modification due to the teaching in Schreck et al. that stabilizers are added to improve various properties of a thermoplastic film, such as a film of polyester. One would have been further motivated to make this modification due to the teaching in Kishida et al. that pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate is added to thermoplastic resins as a heat/color

stabilizing additive. One would have been still further motivated to make this modification due to the fact that it is well known in the art that stabilizers are compounds added to prevent the degradation of polymeric materials.

34. Claims 1, 7, 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murschall as applied to claim 1 above, and further in view of Schreck et al., Kishidal et al. and Ragan et al. (US4551485)

35. Murschall is relied upon as stated above for claim 1.

36. While Murschall does teach the use of a hydrolysis stabilizer in the PET film, Murschall does not teach utilizing a hydrolysis stabilizer comprising .1-1% by weight of an alkali metal stearate/carbonate or alkali earth-metal stearate/carbonate. In addition, these references do not teach the use of .05-.6% by weight of a phenolic stabilizer which has a molar mass greater than 500g, specifically a phenolic stabilizer such as 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene or pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate, as required by claim 9. Nor does Murschall teach the use of an organic phosphorous compound as a flame retardant as required by claim 9. Further, Murschall does not teach the use of organic phosphorous compounds in addition to 0.01-5% by weight of specific UV stabilizers, wherein the organic phosphorous compounds comprise long chain encapsulated ammonium polyphosphates or carboxyphosphinic acids or anhydrides of these compounds as required by claim 11.

37. Regarding the requirement of specific hydrolysis stabilizers. Schreck teaches that to improve the properties of thermoplastic polymers such as polyesters, 0.5-2% by

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weight of stabilizers such as alkali metal stearates/carbonates, and phenolic stabilizers such as 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene or pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate can be added to the polymer composition (column 11, lines 15-20 and column 12, lines 8-21). Further, Kishida et al. teaches phenolic stabilizers such as pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate are heat stabilizers that are added to thermoplastic resins in order to control discoloration and heat deterioration under high temperature conditions, (Kishida column 3, line 63-column 4, line 28).

38. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate .05-2% of a metal stearate/carbonate, alkali earth-metal stearate/carbonate, or a phenolic stabilizer as described by Schreck et al. to the multilayer film described by Murschall as modified by Oishi et al.

39. One would have been motivated to make this modification due to the teaching in Schreck et al. that stabilizers are added to improve various properties of a thermoplastic film, such as a film of polyester. One would have been further motivated to make this modification due to the teaching in Kishida et al. that pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate is added to thermoplastic resins as a heat/color stabilizing additive. One would have been still further motivated to make this modification due to the fact that it is well known in the art that stabilizers are compounds added to prevent the degradation of polymeric materials.

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40. Regarding the requirements directed towards the flame retardant, Ragan et al. (hereafter Ragan) teaches common additives for PET include flame retardants such as ammonium polyphosphates (column 10, lines 1-11).

41. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add ammonium polyphosphates to the PET film of Murschall in order to improve the flame resistance of the film.

42. Regarding the limitations as to the specific U.V stabilizers required by claim 11, Murschall teaches that these exact same compounds are useful as UV stabilizers in the PET film disclosed. Specifically, Murschall teaches adding 0.01-5% by weight of these compounds to the film based on the weight of the PET (page 3, lines 50-55)

43. Therefore it would have been obvious to one of ordinary skill in the art to utilize 0.01-5% by weight of 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxybenzyl)benzene or pentaerythrityl tetrakis-3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate as the UV stabilizer in Murschall, as Muirschall recognizes the equivalence of these compound to the other UV stabilizers listed as suitable for this purpose.

44. The applicant is respectfully reminded that substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In Re Fount* 213 USPQ 532 (CCPA 1982); *In Re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950)

Response to Arguments

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45. Although the above rejection renders the bulk of the applicants arguments moot, the examiner feels that it would be beneficial to address one of the applicants arguments directed towards the validity of the Murschall reference as prior art.

46. The applicant has argued on the record that the Murschall reference (DE19630599) does not constitute valid prior art, and contends that the reference is excluded under 35 U.S.C 102 (f) and 35 U.S.C 102 (g). In particular, the applicant cites that the Murschall reference shares a common inventor and is commonly assigned to the same company as the instant application.

47. However, the examiner respectfully points out that the Murschall reference was published on 5/2/98, which is more than 1 year prior to the applicant's earliest priority date. Thus, Murschall qualifies as valid prior art under 35 U.S.C 102(a-b), and is therefore valid prior art irrespective of whether the reference shares a common inventor and is commonly assigned to the same company as that of the instant application.

48. It is further noted that the applicant in this argument, by citing that the reference would be invalid in any 103 rejection due to a common assignee and common inventor appears to be making an argument that the reference would be excluded from the pool of valid prior art under 35 U.S.C 103(c). However, the applicant is respectfully reminded that 103(c) only applies to art that is valid **only** under 35 U.S.C 102(e), and has a common assignee and common inventor. As Murschall et al. is a valid as a 102(a) or 102(b) type reference based on its publication date, the exclusion under 35 U.S.C 103(c) does not apply.

Examiner's Note

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49. The examiner notes that the applicant in the remarks section of paper number 7 that the applicant instructed the examiner to cancel claims 13-18. However, the examiner has recently been informed that this is improper as the cancellation of claims can only be done in a few ways, one of which is through the applicant filing an amendment specifically reciting the claims that are desired to be cancelled in a section other than "remarks" (i.e in the claims section), or through an examiners amendment, whereby cancellation of the claims would render the case patentable. Thus, as the case now stands, claims 1-11 and 13-18 are pending with claims 13-18 withdrawn from consideration. If the applicant wishes to cancel claims 13-18 the examiner respectfully requests the applicant do so in their next response.

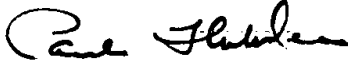
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

NJU
4/7/03


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700